AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Previously Presented) A method for inducing an immunological response against a cell expressing a breast cancer associated antigen in a human, wherein the method comprises:

(a) selecting a human having breast cancer or at risk for developing such a breast cancer tumor,

(b) administering to the individual a first poxvirus vector containing one or more DNA segments that encode (i) mucin (MUC) or an antigenic portion thereof or modified version thereof and (ii) carcinoembryonic antigen (CEA) or an antigenic portion thereof or modified version thereof, and

(c) at regular intervals thereafter administering at least a second poxvirus vector containing one or more DNA segments that encode (i) MUC or antigenic portion thereof or modified version thereof and (ii) CEA or an antigenic portion thereof or modified version thereof,

such that an immunological response against the cell expressing the breast cancer associated antigen is induced in the individual.

2. (Previously Presented) The method of claim 1, further comprising administering at least one co-stimulatory molecule.

3. (Previously Presented) The method of claim 1, further comprising administering granulocyte-macrophage colony stimulating factor (GM-CSF).

4. (Currently Amended) The method of claim 2, wherein the co-stimulatory molecule is administered as a gene contained within the first, second, or both vectors. ~~vector~~

5. (Previously Presented) The method of claim 4, wherein the vector contains at least B7.1, LFA-3 and ICAM-1 as co-stimulatory genes.

6. (Canceled)

7. (Previously Presented) The method according to claim 1, wherein the first and second poxvirus vectors are selected from the group consisting of: an orthopox virus vector; avipox virus vector; a suipox virus vector; a capripox virus vector; a leporipox virus vector; and an iridovirus vector, wherein the first and second poxvirus vectors can be the same or different poxvirus vectors.

8. (Previously Presented) The method according to claim 1, wherein at least one of the poxvirus vectors is a replication impaired or non-replicating poxvirus vector.

9. (Original) The method according to claim 7, wherein said first poxvirus vector is an orthopox vector.

10. (Original) The method according to claim 9, wherein said orthopox virus vector is Wyeth vaccinia, MVA or NYVAC.

11. (Canceled)

12. (Previously Presented) The method of claim 1, wherein the mucin is MUC-1.

13. (Previously Presented) The method of claim 1, wherein the modified version thereof is a wobbled MUC and contains five to fifteen tandem repeats.

14.-15. (Canceled)

16. (Original) The method of claim 1, wherein the mucin is a wobbled MUC-1 or a wobbled mini-MUC-1 having six tandem repeats.

17. (Currently Amended) The method of claim ~~11,~~ 1, wherein the first poxvirus vector is an orthopox vector, and the second poxvirus vector is an avipox vector.

18. (Original) The method of claim 17, wherein the orthopox vector is vaccinia.

19. (Original) The method of claim 18, wherein the vaccinia is vaccinia Wyeth or an attenuated vaccinia.

20. (Original) The method of claim 19, wherein the attenuated vaccinia is MVA or NYVAC.

21. (Previously Presented) The method of claim 17, wherein the orthopox vector is administered in one to three administrations at set intervals and the avipox vector is administered in multiple administrations at set intervals.

22. (Original) The method of claim 21, wherein the set interval is 20 days to 90 days.

23.-39. (Canceled)

40. (Previously Presented) The method of claim 1, wherein the one or more DNA segments comprise SEQ ID NO: 1 and SEQ ID NO: 3, or encode SEQ ID NO: 2 and SEQ ID NO: 4.

41.-43. (Canceled)